TR

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,069	07/21/2003	Rakesh Agrawal	ARC920030034US1	6946

29154 7590 06/28/2006

FREDERICK W. GIBB, III
GIBB INTELLECTUAL PROPERTY LAW FIRM, LLC
2568-A RIVA ROAD
SUITE 304
ANNAPOLIS, MD 21401

EXAMINER	
PADMANABHAN, KAVITA	

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,069	AGRAWAL ET AL.	
	Examiner	Art Unit	
	Kavita Padmanabhan	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-24 are pending.

2. Claims 1-3, 6-9, 12, 13, and 18-24 have been amended. The applicant states at page 11 of applicant's remarks that claims 1-3, 6-9, 12, 13, 19-21, and 24 have been amended. The examiner notes that in the listing of claims, it appears that claims 18 and 22-23 have also been amended.

3. Claims 1-24 are rejected.

Oath/Declaration

4. The declaration under 37 CFR 1.132 filed April 11, 2006 is insufficient to overcome the rejection of claims 1-24 over the publication "Randomization in Privacy Preserving Data Mining," December 2002, ACM SIGKDD Explorations Newsletter, Volume 4, Issue 2, pages 43-48 by Alexandre Evfimievski under 35 U.S.C. 102(a) as set forth in the previous Office action dated 1/11/2006 because (A) it is not properly executed, (B) does not establish that the reference is a publication of Applicant's own invention, (C) does not provide sufficient facts and documentary evidence supported by actual proof and (D) does not refer to the claims, prior to the date of the reference.

(A) **Formalities**: The affidavit is ineffective because it was not properly executed. It has not been signed by all inventors nor does it show that one of the joint inventors was the sole inventor of the claims:

715.04 Who May Make Affidavit or Declaration; Formal Requirements of Affidavits and Declarations [R-2]

> I. < WHO MAY MAKE AFFIDAVIT OR DECLARATION

The following parties may make an affidavit or declaration

(A) All the inventors of the subject matter claimed.
(B) An affidavit or declaration by less than all named inventors of an application is accepted where it is shown that less than all named inventors of an application invented the subject matter of the claim or claims under rejection. For example, one of two joint inventors is accepted where it is shown that one of the joint inventors is the sole inventor of the claim or claims under rejection.

Applicant has not met the criteria above.

(B) **Reference as Applicant's own invention**: The Declaration does not establish that the reference is a publication of Applicant's own invention. The Applicant has not established that the article is describing applicant's own work because the declaration by Applicant does not establish that the applicant, Evfimievski was the sole inventor and that the others were working under his/her direction.

715.01(c) Reference Is Publication of Applicant's Own Invention

Unless it is a statutory bar, a rejection based on a publication may be overcome by a showing that it was published either by applicant himself/herself or on his/her behalf. Since such a showing is not made to show a date of invention by applicant prior to the date of the reference under 37 CFR 1.131, the limitation in 35 U.S.C. 104 and in 37 CFR 1.131(a)(1) that only acts which occurred in this country or in a NAFTA or WTO member country may be relied on to establish a date of invention is not applicable. Ex parte Lemieux, 115 USPQ 148, 1957 C.D. 47, 725 O.G. 4 (Bd. App. 1957); Ex parte Powell, 1938 C.D. 15, 489 O.G. 231 (Bd. App. 1938). See MPEP § 716.10 regarding 37 CFR 1.132 affidavits submitted to show that the reference is a publication of applicant's own invention.

I. >< CO-AUTHORSHIP
Where the applicant is one of the co-authors of a publication cited against his or her application, he or she may overcome the rejection by filing an affidavit or declaration under 37 CFR 1.131. Alternatively, the applicant may overcome the rejection by filing a specific affidavit or declaration under 37 CFR 1.132 ***establishing that the article is describing applicant's own work. An affidavit or declaration by applicant alone indicating that applicant is the sole inventor and that the others were merely working under his or her direction is sufficient to remove the publication as a reference under 35 U.S.C. 102(a)***. Inre Katz, 687 F.2d 450, 215 USPQ 14 (CCPA 1982).

> **716 Affidavits or Declarations Traversing Rejections, 37 CFR 1.132**
>
> It is the responsibility of the primary examiner to personally review and decide whether affidavits or declarations submitted under 37 CFR 1.132 for the purpose of traversing grounds of rejection are **responsive to the rejection and present sufficient facts to overcome the rejection.**
> This rule sets forth the general policy of the Office consistently followed for a long period of time of receiving affidavit evidence traversing rejections or objections. All affidavits or declarations presented which do not fall within or under other specific rules are to be treated or considered as falling under this rule.

Applicant has not met the criteria above. The applicant has not provided a copy of the publication "Privacy Preserving Mining of Association Rules" (July 2002) and has not established from where in this publication the individual claims are derived.

In view of the foregoing, when all the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

In view of the foregoing, when all of the evidence is considered, the declaration under 37 CFR 1.132 filed April 11, 2006 is insufficient to overcome the rejection of claims 1-24 over the publication "Randomization in Privacy Preserving Data Mining," December 2002, ACM SIGKDD Explorations Newsletter, Volume 4, Issue 2, pages 43-48 by Alexandre Evfimievski under 35 U.S.C. 102(a).

Specification

5. The abstract of the disclosure is objected to because it includes phrases which case be implied, such as "Disclosed herein" at line 1 of the abstract. Correction is required. See MPEP § 608.01(b).

Claim Objections

6. **Claim 7** is objected to because of the following informalities: The period at line 4 of the claim should be changed to a comma. Appropriate correction is required.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claims 1-24** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a test of whether the invention is categorized as a process, machine, manufacture or composition of matter and if the invention produces a useful, concrete and tangible result. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must produce a useful, concrete and tangible result.

In the instant case, **Claims 1-18** recite methods, but the methods claimed appear to be directed towards abstract ideas and do not produce a useful, concrete and tangible result.

Regarding **claim 1**, while the active method steps recited appear to provide a result that is useful and concrete (i.e., randomly dropping true items, randomly inserting false items, and estimating the support of an association rule whereby privacy breaches are controlled), there does not appear to be a tangible result produced. Firstly, estimating nonrandomized support "so as to recover said association rule" does not require that "said association rule" is actually recovered, but rather constitutes intended use functional language. Furthermore, estimating the support of a rule as recited in the claim still appears to constitute an abstract idea, and not the

application of the abstract idea in such a way as to produce a tangible result. **Claims 2-18** are similarly nonstatutory.

Claims 19-24 recite a program storage device tangibly embodying a program of instructions to perform a method that is substantially the same as the method recited in claims 1-18. Therefore, these claims are similarly non-statutory for the same rationale.

The examiner will apply prior art to these claims as best understood, with the assumption that applicant will amend to overcome the stated 101 rejections.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. **Claims 1-24** are rejected under 35 U.S.C. 102(a) as being anticipated by **Evfimievski, "Randomization in Privacy Preserving Data Mining," December 2002, ACM SIGKDD Explorations Newsletter, Volume 4, Issue 2, pages 43-48.**

In regards to **claim 13**, **Evfimievski** teaches a computer-implemented method of mining association rules from datasets **(Evfimievski; p43, left column, paragraph 2, lines 13-14 – "an algorithm for mining...")** while maintaining privacy of individual transactions within said datasets **(Evfimievski; p43, left column, paragraph 3, lines 7-9 – "a solution is preferred...")**

through randomization **(Evfimievski; p44, right column, paragraph 6, lines 1-2 – "consider randomization...")**, said method comprising:

- creating randomized transactions from an original dataset by:
    - randomly dropping true items from each transaction in said original dataset **(Evfimievski; p43, left column, paragraph 3, line 10 – right column, paragraph 1, line 2 – "before sending it's piece of data..."; p44, right column, paragraph 6, lines 2-4 – "Suppose that each client..."; p45, left column, paragraph 4, lines 7-8 – "A natural way to randomize...")**, and
    - randomly inserting false items into each transaction in said original dataset **(Evfimievski; p43, left column, paragraph 3, line 10 – right column, paragraph 1, line 2 – "before sending it's piece of data..."; p44, right column, paragraph 6, lines 2-4 – "Suppose that each client..."; p45, left column, paragraph 4, lines 7-8 – "A natural way to randomize...")**;
- creating a randomized dataset by collecting said randomized transactions **(Evfimievski; p45, left column, paragraph 8, lines 1-3 – "In the set T' of randomized transactions...")**;
- collecting said randomized dataset in a database **(Evfimievski; p45, left column, paragraph 8, lines 1-3 – "In the set T' of randomized transactions...")**; and
- mining said database to recover an association rule after said dropping and inserting processes by estimating nonrandomized support of said association rule in said original dataset based on randomized support for said association rule in said randomized dataset, wherein, due to said creating of said randomized transactions, privacy breaches of said

individual transactions are controlled during said mining **(Evfimievski; p45, left column, paragraph 9, line3 – right column, paragraph 6, line 9 – "Therefore, techniques were developed that allow to estimate...")**.

In regards to **claim 14, Evfimievski** teaches the method in claim 13, wherein said process of creating randomized transactions comprises per transaction randomizing, such that randomizing operators are applied to each transaction independently **(Evfimievski; p45, left column, paragraph 4, line 13 – paragraph 8, line 11 – "Given a transaction t...")**.

In regards to **claim 15, Evfimievski** teaches the method in claim 13, wherein said process of creating randomized transactions is item-invariant such that a reordering of said transactions does not affect outcome probabilities **(Evfimievski; p45, left column, paragraph 4, line 7 – paragraph 8, line 11 – "A natural way to randomize..."; also, par [0048] of applicant's specification states that select-a-size operators are item-invariant)**.

In regards to **claim 16, Evfimievski** teaches the method in claim 13, wherein said dropping of said true items and said inserting of said false items are carried out to an extent such that the chance of finding a false itemset in a randomized transaction relative to the chance of finding a true itemset in said randomized transaction is above a predetermined threshold **(Evfimievski; p46, left column, paragraph 3, lines 1-13 – "In order to prevent...")**.

In regards to **claim 17, Evfimievski** teaches the method in claim 16, wherein said predetermined threshold provides that the chance of finding a false itemset in said randomized transaction is approximately equal to the chance of finding a true itemset in said randomized transaction **(Evfimievski; p46, left column, paragraph 3, lines 1-13 – "In order to prevent...")**.

In regards to **claim 18, Evfimievski** teaches the method in claim 13, wherein said process of creating randomized transactions is performed independently on said transactions prior to the transactions being collected in said database **(Evfimievski; p45, left column, paragraph 8, line 1 – paragraph 9, line 3 – "If different clients have transactions...")**.

Claims 1-6, claims 7-12, and claims 19-24 are each rejected with the same rationale given for claims 13-18, respectively.

Response to Amendment

11. Applicant's amendments filed 4/11/06 with respect to the specification have been fully considered. The objections that have been overcome by the amendments to the specification have been withdrawn accordingly. However, the objection to the abstract has been maintained.

12. Applicant's amendments filed 3/29/06 with respect to the 35 U.S.C. 112, 2nd paragraph rejections of the claims have been fully considered. The rejections that have been withdrawn accordingly.

Applicant's amendments filed 3/29/06 with respect to the 35 U.S.C. 101 rejections of the claims have been fully considered. However, the claims still do not appear to produce a tangible result. Firstly, estimating nonrandomized support "so as to recover said association rule" does not require that "said association rule" is actually recovered, but rather constitutes intended use functional language. Furthermore, estimating the support of a rule still appears to constitute an abstract idea, and not the application of the abstract idea in such a way as to produce a tangible result.

Response to Arguments

13. Applicant's arguments filed 4/11/06 have been fully considered but they are not persuasive.

The applicant argues that the declarations submitted by Evfimievski (Exhibit A) and Gehrke (Exhibit B) are sufficient to establish that the relevant portions of the publication used in the rejections of claims 1-24 originated with or were obtained from the applicant's own work. The examiner respectfully disagrees for reasons set forth above. For example, one of the joint inventors, Evfimievski, has submitted a declaration stating that he is the sole author of the publication used in the rejections of claims 1-24 of the present application, and that the portions of the publication relied upon in the rejections are based on a previous publication, "Privacy Preserving Mining of Association Rules" (July 2002) of which he is a co-author, along with the three others, two of which are also inventors of the present application. The declaration also states that the co-author, Gehrke, of "Privacy Preserving Mining of Association Rules" (July 2002), is not an inventor of claims 1-24 of the present application. A declaration has also been

submitted by Gehrke declaring that while he is a co-author of "Privacy Preserving Mining of Association Rules (July 2002)", he is not an inventor of claims 1-24 of the present application. However, the applicant has not provided a copy of the publication "Privacy Preserving Mining of Association Rules" (July 2002). Also, the applicant of the present application consists of three inventors, and two of the inventors listed, Agrawal and Srikant, have not submitted signed declarations. Moreover, the rejection of claims 1-24 of the present application are based on the publication "Randomization in Privacy Preserving Data Mining" (December 2002) and not on "Privacy Preserving Mining of Association Rules (July 2002)". Furthermore, the source of the portions of the publication relied upon are not limited to "Privacy Preserving Mining of Association Rules" (July 2002). They also include, for example, "Maintaining data privacy in association rule mining," by S.J. Rizvi and J.R. Haritsa (see page 44, right column, last paragraph, line 1 of "Randomization in Privacy Preserving Data Mining" (December 2002)). None of the authors of this paper have submitted declarations disclaiming the content of the present application. Therefore, it has not been established that the portions of the publication relied upon in rejections of claims 1-24 originated with or were obtained from the applicant's own work.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kavita Padmanabhan** whose telephone number is **571-272-8352**. The examiner can normally be reached on Monday-Friday, 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kavita Padmanabhan
Assistant Examiner
AU 2161
***

June 19, 2006

UYEN LE
PRIMARY EXAMINER